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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Divisional Patent Application of UNDERBRINK ET AL.	)	Group Art Unit: 2681
Divisional Patent Application of: Serial No. 09/394,189	)	Examiner: CRAVER, V.
Filed: 09/13/99	)	
For: WIRELESS COMMUNICATIONS SYSTEM UTILIZING DIRECTIONAL WIRELESS COMMUNICATION DEVICE	)	

BOX PATENT APPLICATION
Assistant Commissioner
for Patents
Washington, D.C. 20231

EXPRESS MAIL CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.10

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Signature, Kelly Breeze
Date of Signature: 03/29/01

PRELIMINARY AMENDMENT

Pursuant to filing the above-identified Divisional patent application, please amend the application as follows.

IN THE DRAWINGS

Figure 8 is included herewith.

IN THE TITLE

Delete the title "Directional Antenna for Handheld Wireless Communication Device" on Page 1 of the application and insert the title –Wireless Communications System Utilizing Directional Wireless Communication Device--

IN THE SPECIFICATION

Insert the following paragraph [0001] after the Title of the Invention on page 1 of the application:

--[0001] This application is a divisional application of serial number 09/394,189, "Directional Antenna for Handheld Wireless Communication Device," filed September 13, 1999, to which priority for the present application is claimed.—

IN THE CLAIMS

All pending claims are herewith presented for the convenience of the Examiner.

Claims 1 through 16 are hereby cancelled without prejudice or disclaimer.

17. A system for cellular communications comprising:

a plurality of service cells, each service cell having an associated base station;

one or more handheld wireless communications devices having at least one directional antenna; and

wherein the plurality of service cells are coordinated to provide communications services to the one or more handheld wireless communications devices when each device changes the orientation of its associated directional antenna.

18. The system for cellular communications of claim 17 wherein each handheld wireless communications device has a patch antenna that is used to transmit signals.

19. The system for cellular communications of claim 17 wherein each handheld wireless communications device has a patch antenna that is used to receive signals.

20. The system for cellular communications of claim 17 wherein each handheld wireless communications device further comprises:

a transmit patch antenna that is used to transmit signals; and

a receive patch antenna that is used to receive signals.

21. The system for cellular communications of claim 17 wherein each handheld wireless communications device further comprises:

a patch antenna that is used to transmit signals; and

a monopole antenna that is used to receive signals.

22. **(NEW)** The system for cellular communications of claim 17 further comprising a call routing and call mapping system coupled to each service cell, the call routing and call mapping system allocating allocating channel bandwidth between each service cell to accommodate a change in orientation of the user.

23. **(NEW)** A method for providing cellular communications comprising:

determining the location of a user having a directional wireless device;

allocating call resources at one or more adjacent cells; and

setting up a call channel with the user.

24. **(NEW)** The method of claim 23 wherein setting up the call channel with the user is performed in parallel with the other steps.

25. **(NEW)** The method of claim 23 further comprising:

determining whether a change in orientation of the user is occurring; and

handing over the user to an optimal cell.

26. **(NEW)** The method of claim 25 wherein determining whether the change in orientation of the user is occurring comprises monitoring the signal strength of the directional wireless device at two or more base stations.

27. **(NEW)** The method of claim 25 wherein handing over the user to an optimal cell comprises handing over the user to a cell which the user is turning the directional wireless device towards.

28. **(NEW)** The method of claim 25 wherein determining whether the change in orientation of the user is occurring comprises monitoring the signal strength of the directional wireless device at the directional wireless device.

29. **(NEW)** The method of claim 28 wherein handing over the user to the optimal cell comprises:

transmitting a first signal from the directional wireless device to a first base station; and

receiving a second signal at the directional wireless device from a second base station.

30. **(NEW)** The method of claim 28 wherein handing over the user to the optimal cell comprises:

transmitting new call channel data to the wireless device from a first base station; and

changing the transmission characteristics at the directional wireless device to allow a transmitted signal from the directional wireless device to be received at a second base station.

31. **(NEW)** A method for providing cellular communications comprising:

determining an orientation of a user having a directional wireless device;

establishing a call channel with the directional wireless device from a first base station;

determining a change in orientation of the directional wireless device; and

setting up a new call channel with the user and a second base station.

32. **(NEW)** The method of claim 31 wherein determining the orientation of the user having the directional wireless device comprises determining which of two or more base stations should serve the directional wireless device.

33. **(NEW)** The method of claim 31 wherein determining the orientation of the user having the directional wireless device comprises determining which of two or more base stations is receiving the greatest magnitude of field strength from the directional wireless device.

34. **(NEW)** The method of claim 31 wherein determining the orientation of the user having the directional wireless device comprises determining the orientation of the user by triangulation.

35. **(NEW)** The method of claim 31 wherein determining the change in orientation of the directional wireless device comprises monitoring a signal strength of the directional wireless device at two or more base stations.

36. **(NEW)** The method of claim 31 wherein setting up the new call channel with the user and the second base station comprises assigning different transmission and reception characteristics for the new call channel.

REMARKS

Pursuant to the filing of the above-referenced divisional patent application, Applicants cancel originally filed claims 1 through 16 without prejudice or disclaimer, and submit with this Preliminary Amendment originally submitted Claims 17 through 21 and new claims 22 through 36. The Examiner is invited to contact the Attorney for the Applicants at the telephone number provided below if further explanation of the Applicants' position would help to advance the prosecution of the application.

The title of the invention has been changed to reflect the focus of the elected claims.

The specification has been amended to refer to the parent application, serial number 09/394,189, "Directional Antenna for Handheld Wireless Communication Device," filed September 13, 1999.

Figure 8 of the drawings was inadvertently omitted at the time of filing the parent case of this divisional application, and is included herewith. No new matter is added by the inclusion of this Figure 8.

No additional fee is believed to be due with this preliminary amendment. If any required fee has been overlooked, the Commissioner of Patents and Trademarks is hereby authorized to charge

any fee deficiency or to credit any fee overpayment relating to this matter to Deposit Account No. 01-0657.

Respectfully submitted,

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Date: 3/29/2011

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